ART. XIII.—*Of the Transverse or Occipito-Iliac Positions of the Vertex Presentation.* By JOSEPH K. T. VAN PELT, M. D., of Philadelphia.

IT is a remarkable circumstance that there are physicians, in extensive practice too, who but seldom meet with cases of preternatural parturition and unusual presentations, demanding a resort to version, forceps, and other expedients, while others, in more limited business, are fated to encounter them again and again. Strange as this may appear, it is nevertheless true. Facts within my own knowledge abundantly prove it.

Instances of transverse presentation having come under my own management, occurring, moreover, within a comparatively brief interval, I have thought that a communication respecting them might not be an inappropriate article for the pages of this journal. I have not the vanity to suppose that I can present anything new on this subject to the profession. My only object is to show that cases of the kind above mentioned do happen, and that perhaps more commonly than is generally imagined; and then, as a necessary consequence, the importance of a thorough preparation to treat them successfully. As to the method by which the delivery in the cases I am about to notice was conducted, I claim nothing that is either original or novel, having adopted merely those measures with which every well-instructed accoucheur is familiar.

In the classification of the vertex presentations, as given in some of our text-books, no place is assigned to those of the character now under consideration, although more justly entitled, in my judgment, to recognition than the occipito-pubal and occipito-sacral positions, which are invariably mentioned in obstetrical works, but which, nevertheless, are seldom, if ever, met with in practice. Different authors have acknowledged the transverse positions. Thus, Madame Lachapelle describes her fifth position as the occiput directly to the left, and her sixth as occiput directly to the right. Professor Moreau gives the following classification:—

First Genus: Vertex Presentation.
- 1st *Position:* Left Occipito-Ilium.
  - Anterior.
  - Transverse.
  - Posterior.
- 2d *Position:* Right Occipito-Ilium.
  - Anterior.
  - Transverse.
  - Posterior.

Flamant designates his seventh as occipital fontanelle above the left iliac fossa; when above the right iliac fossa, as the eighth. Ramsbotham, in like manner, enumerates the seventh and eighth respectively as occipito-left and occipito-right iliac. Dr. Davis's third position is, "where the right ear lies immediately behind the symphysis pubis, and the occiput is directed to the left side of the pelvis." The division employed by Dr. Joseph Warrington, my respected preceptor, I here insert, as being the most perfect and

significant of all tabular denominations of the head, and on this account well worthy of recollection. It is to be understood that the patient is lying on the left side.

1. Occiput to left acetabulum.	Occiput downwards and forwards.
2. Occiput to right acetabulum.	Occiput upwards and forwards.
3. Occiput to pubis.	Occiput directly forwards.
4. Occiput to right sacro-iliac junction.	Occiput upwards and backwards.
5. Occiput to left sacro-iliac junction.	Occiput downwards and backwards.
6. Occiput to sacrum.	Occiput directly backwards.
7. Occiput to left ilium.	Occiput directly downwards.
8. Occiput to right ilium.	Occiput directly upwards.

Other writers, as Kilian, Smellie, Chevreul, Cazeau, Boivin, and Hamant, admit their occurrence, and assign them a place in their catalogue of vertex presentations. Smellie and Burns even contend that the head does not turn, or execute its pivot-like motion of rotation, until it has arrived at the inferior strait; and the latter remarks that when as low down as the floor of the excavation it is still found crosswise.

In diagnosing these transverse positions, I have argued that they truly deserved the appellation, by observing the vertex, long before it sank into the excavation, to be on the same line with the bi-ischiatic diameter of the inferior strait; no conversion into an anterior or posterior position, by rotation to either side of the tuberosity, ensuing after it engaged in the true pelvis. Indeed, the parallelism of the occipito-bregmatic or vertical diameter of the cranium with that of the bi-ischiatic was not changed by rotation until the perineal tumour had formed, as the following cases show:—

CASE 1. Sarah Ann F——, æt. 22; primipara; sent for me at 9 P. M., March 17, 1856. Membranes ruptured, and os uteri one-third dilated; vertex plainly felt jutting below the brim of the pelvis in the seventh position (occiput to left ilium). By exerting a little tension with the finger against the cervix, the pains became more violent, with large gushes of the waters at intervals. Dilatation of os uteri complete at 11 P. M. At midnight, head at inferior strait; pains very violent, and rapid in their return; perineal tumour formed; by pressing back the perineum, vertex felt close to the left tuberosity. Child born at 12½ P. M.; male; occipito-mental diameter $5\frac{8}{10}$, occipito-frontal $4\frac{1}{10}$, bi-parietal $3\frac{5}{10}$. Duration of labour; six hours.

CASE 2. Anna R——, æt. 31; seventh pregnancy; sent for April 29, 1856, at 7 P. M. Os uteri dilated and contracted above the head; ruptured the membranes; eighth position; pain ceased for nearly an hour; attempts to favour rotation by pressing against the right parietal bone, but the head appeared too firmly placed to allow of success. At 9 the presentation completely filled up the excavation, the pains increasing in violence; head still in the same position. At 10½ P. M. the delivery was accomplished, a few moments elapsing between the beginning of rotation and the exit of the head; male; cord around neck once; occipito-mental $5\frac{9}{10}$, occipito-frontal $4\frac{5}{10}$, bi-parietal $4\frac{0}{10}$. Duration of labour, eight hours.

CASE 3. Catharine Adelaide C——, æt. 23; fourth pregnancy; was delivered at 6 A. M., December 28, 1857, after eight hours of hard labour,

the head being in the seventh position till within fifteen minutes of delivery. All my efforts to force the rotation by the hand having proved ineffectual, this part of the mechanism of labour was accomplished under the intensity of the last pains. Female; occipito-mental $5\frac{1}{16}$, occipito-frontal $5\frac{1}{16}$, bi-parietal 4 inches.

CASE 4. Elizabeth K——, æt. 29; fourth pregnancy. I was summoned at 11 P. M., February 1, 1860, and found the waters drained off, the os uteri being two inches in diameter. I diagnosed the eighth position shortly after the dilatation was partially completed. The pains, which were at first irregular and feeble, became very strong at 4 A. M., the head remaining transverse until after 5, when, rotation having taken place, a single uterine contraction finished the delivery. Male; occipito-mental $5\frac{5}{16}$, occipito-frontal $4\frac{3}{16}$, bi-parietal $3\frac{1}{16}$. Duration of labour, six hours.

With many this disposition of the head is associated, in idea, with that condition known as locked or impacted, and requiring, necessarily, the use of forceps, if not the perforator and crotchet. This is a mistaken view, as will readily be seen by reference to the preceding cases. Labours which are of a tedious and painful character, in general, contrasted with those of the first and second positions of the vertex, may yet terminate naturally and safely, albeit demanding considerable manual effort to assist, and almost force, the rotation towards the pubal arch. My own experience has taught me that, under these circumstances, we must in some labours, however, anticipate a severe struggle on the part of the patient, and, for ourselves, a recourse, at a certain period of the accouchement, to forceps, though I have no doubt that adequate delay would of itself secure a natural termination of the delivery. But it seems to me a species of refined cruelty to witness with stoical indifference the most intense agony which the human frame can endure, while it is in our power, if not restrained by prejudice or timidity, to terminate it at once, by means always successful when used with skill and discretion.

An increased bulk of the lateral dimensions of the fœtal cranium has been regarded as inducing the transverse positions. The bi-parietal diameter, however, is not unfrequently found considerably over four inches, and the presentation, that of the first position of the vertex, attended by a natural and easy labour. Indeed, we often find this diameter measuring four inches in pelvic presentations, and the head disengaging itself without any opposition. A vitiated condition of the sacro-pubal or conjugate diameter of the superior strait has been also assigned as a cause of the iliac positions. I have never yet encountered this in any exaggerated form. When a great disproportion exists between the pelvic dimensions and the size of the head, whether dependent on excessive volume of the latter or a contraction of the former, it is plain that an arrest of the lateral extremities of the cranium will occasion the impacted condition of the transverse position.

As the four inches, usually acknowledged the average measurement of

the conjugate diameter of the superior strait, is not a constant quantity, and the bi-parietal in like manner being subject to much variety, it is certain that the circumstances which occasion the occurrence of this position will not be invariably the same, since the cases about to follow prove that it may exist with a bi-parietal of small extent, even so low as $3\frac{3}{10}$, no matter what the size of the pelvic diameter, and thereby render instrumental interposition essential.

CASE 5. Bridget D——, æt. 35; ninth pregnancy. Labour began at 9 P. M., April 26, 1855; strong and frequent pains all night; at 3 A. M. the waters escaped; os uteri widely dilated, and the head plainly felt in the seventh position. The pains continued with great violence until 8 A. M., when they ceased entirely, the head remaining stationary at the brim. Symptoms of exhaustion being quite apparent at 12 M., I applied Davis's forceps, placing the left-hand blade obliquely over the posterior and left part of the head, and the right-hand blade over the anterior and right portion; rotation was effected within the forceps, their grasp being relaxed to permit that movement. Male; occipito-mental $5\frac{1}{2}$, occipito-frontal $4\frac{1}{2}$, bi-parietal $3\frac{3}{4}$. Duration of labour, fifteen hours. Treatment of mother and child successful.

CASE 6. Mary H——, æt. 35; second pregnancy. Labour began at 12 P. M., May 3, 1855; head presented in the seventh position; liquor amnii discharged before one-fourth of the dilatation of the os was complete; violent and excessive uterine action all night; dilatation of os uteri extremely tardy. During the day attempted to assist rotation, but failed. At $6\frac{1}{2}$ P. M., the pains having become quite feeble, I adjusted Davis's forceps to the head, now sunk in the excavation, obliquely, as described in the preceding case, after pushing the os uteri above and away from the presentation; rotation followed, as in that case. Female; occipito-mental $5\frac{1}{2}$, occipito-frontal $5\frac{2}{10}$, bi-parietal $3\frac{3}{4}$. Duration of labour, eighteen hours. Treatment of mother and child successful.

CASE 7. Bridget S——, æt. 26; fourth pregnancy. Labour commenced at $2\frac{1}{2}$ P. M., February 11, 1856; dilatation of os uteri completed in five hours, waters escaping spontaneously soon after; head gradually sunk into the excavation in the eighth position, the os passing above its occipito-frontal circumference. At 9 P. M. the head became immovably fixed; the pains then acquired great force, but proved inadequate to move the head forwards. At $3\frac{1}{2}$ A. M. I adjusted Davis's forceps obliquely over the occiput and sinciput, and delivered a male child; cord around neck once; occipito-mental $5\frac{4}{10}$, occipito-frontal $4\frac{6}{10}$, bi-parietal $3\frac{3}{4}$. Duration of labour, thirteen hours. Treatment of mother and child successful.

CASE 8. May 12, 1856, I was requested by Dr. T—— to deliver Mary J——, æt. 18, primipara, who had been in labour fourteen hours; waters discharged, and the head in the eighth position, encircled by the os uteri and engaged in the brim. As this condition had already lasted many hours without its making the least progress, I inserted the blades of Davis's forceps within the os uteri, placing them obliquely over the occipito-frontal diameter of the child; rotation followed within the blades, which were then removed, and applied as is customary for the first vertex position. Male; occipito-mental $5\frac{1}{2}$, occipito-frontal $4\frac{1}{2}$, bi-parietal $3\frac{3}{4}$. Treatment of mother and child successful.

CASE 9. Anna S——, æt. 25; primipara. Labour began 3 P. M., June 11, 1856, attended with frequent and energetic contractions; os uteri dilated at 12 P. M. Three hours after I ruptured the membranes, hoping that the head would soon descend into the inferior strait; discovered the eighth position. At 7½ A. M., finding that no advancement had been made, and that the pains were still very violent, the patient's countenance flushed, and her sufferings exceedingly great, I delivered the head by placing the Davis forceps transversely over the occipito-frontal diameter. Male; occipito-mental $5\frac{3}{16}$, occipito-frontal $5\frac{1}{16}$, bi-parietal $3\frac{13}{16}$; cord around neck once. Duration of labour, sixteen hours. Treatment of mother and child successful.

CASE 10. Anna C——, æt. 29; primipara. Labour began near 5 P. M., January 26, 1857; waters had ruptured early; eighth position; preternatural firmness and solidity of the cranial bones; os uteri rigid, vagina hot, and abdomen tender to the touch. Tartar emetic in divided doses and v. s. ℥xvj. Great intumescence of the scalp; pains very violent; os nearly dilated at 12 M. of the following day. At this period meconium was passed. When the head had sunk into the excavation, at 3 P. M., I locked the Davis forceps obliquely over it, delivering a still-born male child; occipito-mental $5\frac{3}{16}$, occipito-frontal $4\frac{15}{16}$, bi-parietal $3\frac{9}{16}$. Duration of labour, twenty-two hours. Patient's recovery was rapid.

CASE 11. Cecilia M——, æt. 18; primipara. Labour began 9 A. M., February 26, 1857, lasting twenty-nine hours, during six of which there was scarcely any pain; seventh position. The os being flaccid and yielding, but still embracing the head at the superior strait, I did not hesitate to lock the Davis forceps obliquely over the cranium, while within that organ. Male; occipito-mental $5\frac{7}{16}$, occipito-frontal $4\frac{13}{16}$, bi-parietal $3\frac{9}{16}$. Treatment of mother and child successful.

CASE 12. Mary T——, æt. 35; primipara. Pains began at 3 P. M., March 18, 1859; seventh position. After eighteen hours of severe suffering, I withdrew the head from the brim by the Davis forceps, locked obliquely, the patient being a delicate person, and completely exhausted from the length and character of the labour. Male; occipito-mental $5\frac{9}{16}$, occipito-frontal $4\frac{13}{16}$, bi-parietal $3\frac{9}{16}$. Treatment of mother and child successful.

M. de Leurie was the first to recommend the adaptation of the forceps after the manner shown in the preceding cases. As far as my experience extends, I have never witnessed any disfigurement or injury of the features of the infant by thus applying them, which was the ground of the objection urged by Baudelocque, who also denied the possibility of any diminution of the bi-parietal diameter by this means, asserting, on the contrary, that it must necessarily be increased. It is easy to refute his statement practically by placing the head of a still-born infant in the grasp of the instruments, as they have been adjusted in my own cases. Not only is the head then found to have its rotation, if I may use the expression, started, but an actual decrease of the bi-parietal ensues, the occipito-frontal being that diameter which becomes elongated. In fine, from the results so frequently witnessed in practice, I regard this presentation as affording as great a field for exhibition of the safety and usefulness of the obstetrical forceps as

can be had by any other disposition of the fœtal superficies. Smellie advises: "If the operator finds the upper parts of the sacrum jutting in so much that the point of the forceps cannot pass it, let him try with his hand to turn the forehead a little backwards, so that one ear will be towards the groin, and the other towards the side of that prominence, consequently there will be more room for the blades to pass along the ears; but if the forehead should remain immovable, or, though moved, return to its former place, let one blade be introduced behind one ear, and its fellow before the other."

In these cases I have had very little success from employing the vectis or lever to assist rotation. Velpeau asserts that, to use the vectis with most effect, the head should be in the excavation, and have executed its rotation. Most of my cases have required interference while the head was still in the brim. In a *natural* labour, spontaneous rotation is occasioned through the counter-resistance of the concavity of the pelvic floor against the occiput, when it has sunk so low down as to be beyond the influence of the bones and ligaments; it is, therefore, useless to attempt rotation in cases of *dystocia*, where the head is situated higher up than the soft tissues at the inferior strait.

Professor Simpson represents the vectis as an instrument for producing extraction, rotation, and restoring the flexion of the head; but recommends the *straight* forceps as far superior to it in securing rotation and extraction, while he regards the *curved* forceps as inferior in that respect to the vectis. Davis's forceps always furnish a safe and sufficient extractive power, if locked in the oblique or acetabulo-sacro-iliac diameter, over a transverse presentation of the head, the rotation effected within its blades being as complete and gradual as that occurring in a natural delivery. By thus adjusting the forceps, we avoid injuring the soft parts in front of the head, as the urethra, bladder, and anterior planes of the os and vagina; obviating, likewise, undue compression of the soft and delicate structures covering the promontory of the sacrum. Professor Simpson observes: "The blades of the long forceps should, I believe, be placed obliquely upon the child's head—one, the posterior, over the side of the occiput; and the other, or anterior, over the side of the brow or temple—and consequently they should be generally situated somewhat in the oblique diameter of the brim."

The difficulty encountered in applying the forceps to the *sides* of the head, in occipito-iliac positions, is owing to the sacro-vertebral angle, coccyx, and perineum offering such obstacles as will rarely permit of their being placed transversely, or allow extraction to be made in the direction of the axis of the superior strait, while in most cases there is not sufficient room for the blades to be inserted between the pelvic bones and those of the fœtal cranium.

I append the cases which have presented the largest bi-parietal diameters.

Case 13. ——, æt. 20; primipara; seventh position. Applied, for Dr. S——, Davis's forceps, locking them obliquely, rotation being performed while within their hold; anterior fontanelle plainly felt high up in the right side of the pelvis. Delivery accomplished at 12 M., July, 1855; duration of labour, twenty-four hours. Bi-parietal, apparently, quite large; head not measured. Treatment of mother and child successful.

Case 14. Matilda R——, æt. 30; fifth pregnancy; seventh position; delivered 10 P. M., February 19, 1856; unsuccessful in attempting rotation by the vectis; Davis's forceps locked obliquely over occiput and sinciput. Female; occipito-mental $5\frac{6}{16}$, occipito-frontal $4\frac{3}{16}$, bi-parietal $4\frac{2}{16}$. Duration of labour, sixteen hours. Treatment of mother and child successful.

Case 15. Sarah C——, æt. 38; primipara; eighth position; delivered 2 P. M., March 12, 1856; Davis's forceps locked obliquely within os uteri. Female; occipito-mental $5\frac{6}{16}$, occipito-frontal $4\frac{5}{16}$, bi-parietal $4\frac{4}{16}$. Duration of labour, nineteen hours. Treatment of mother and child successful.

Case 16. Anna H——, æt. 42; eighth pregnancy; eighth position, complicated with a slight departure of chin from the breast; efforts made with vectis to restore the proper flexion. Davis's forceps applied obliquely in excavation; catheterism resorted to previously. Delivery 6 P. M., March 24, 1856. Female. This labour was so severe, that I recommended at an early period a resort to forceps, which she obstinately opposed, until complete exhaustion and fatigue compelled a compliance with my advice. A large slough separated in a few days from each parietal boss, completely exposing the bone, and remaining unhealed many weeks, a manifest result of the great pressure sustained by those surfaces, which might have been prevented by earlier resort to instrumental aid. Duration of labour, twenty hours. Occipito-mental $5\frac{6}{16}$, occipito-frontal $4\frac{4}{16}$, bi-parietal $3\frac{7}{16}$. Patient's recovery was rapid.

Case 17. Rebecca J——, æt. 23; primipara; eighth position. Succeeded in adjusting the Davis forceps to the *sides* of the head. Delivered at $2\frac{1}{2}$ P. M., March 27, 1856. Male; occipito-mental $5\frac{6}{16}$, occipito-frontal $4\frac{5}{16}$, bi-parietal 4 inches. Duration of labour, twelve hours. Treatment of mother and child successful.

Case 18. Rosaline G——, æt. 31; eighth pregnancy; eighth position. Delivered $10\frac{3}{4}$ A. M., April 21, 1857. Davis's forceps applied obliquely. Male. Duration of labour, fourteen hours. Occipito-mental $5\frac{2}{16}$, occipito-frontal $5\frac{1}{16}$, bi-parietal $4\frac{2}{16}$. Treatment of mother and child successful.

Case 19. Sarah M——, æt. 26; third pregnancy; seventh position. Davis's forceps adapted obliquely to the head. Delivered of an uninjured live male child at 3 P. M., December 6, 1857. Duration of labour, fourteen hours. Occipito-mental $5\frac{1}{16}$, occipito-frontal $5\frac{1}{16}$, bi-parietal $3\frac{1}{16}$. In her previous labours, which were also instrumental, under other physicians, the children were still-born. Speedy recovery of mother.

Case 20. Ellen M——, æt. 39; primipara; attended January 8, 1858; seventh position. After she had been twenty-two hours in labour, I auscultated the abdomen; fœtal heart not heard; child evidently dead; os uteri rigid and unyielding; its circumference felt a few lines beneath the head. As the head did not advance, and seemed perfectly immovable, the patient's sufferings being great, and constitutional disturbance evident, I urged cra-

niotomy, which was rejected. Eight hours after, I received permission to deliver with the forceps, locking the blades obliquely, but was compelled to pass them within the uterus for that purpose; the compression made by the presentation, as I drew it down from the brim, completed the dilatation of the os uteri. I had never before, nor have since, been compelled to employ so great force in extracting the head. Male; stillborn; occipito-mental $5\frac{1}{16}$, occipito frontal $5\frac{1}{16}$, bi-parietal $3\frac{5}{16}$. The mother was sufficiently recovered to leave her room on the seventh day. I have been informed that this patient died recently, in a subsequent labour, undelivered, at a neighbouring city.

CASE 21. Jane F——, æt. 28; primipara; delivered 11 A. M., February 3, 1858; seventh position. Davis's forceps applied obliquely. Male; occipito-mental $5\frac{9}{16}$, occipito-frontal $5\frac{7}{16}$, bi-parietal 4 inches. Duration of labour, twenty-three hours. Treatment of mother and child successful. I am daily expecting the second accouchement of this patient.

CASE 22. Bridget P——, æt. 30; fourth pregnancy; delivered $3\frac{1}{2}$ P M., February 25, 1859; seventh position. Davis's forceps applied obliquely within the os, head at brim. Female; occipito-mental $5\frac{6}{16}$, occipito-frontal $4\frac{1}{16}$, bi-parietal $3\frac{5}{16}$. Duration of labour, eighteen hours. Treatment of mother and child successful.

CASE 23. Margaret G——, æt. 31; fifth pregnancy; seventh position; delivered $12\frac{1}{2}$ A. M., November 18, 1859. Davis's forceps applied obliquely to the head at the brim. I was compelled in this case to pass the lock or junction of the blades a short distance within the vagina to reach the head. Female; occipito-mental $5\frac{6}{16}$, occipito-frontal $4\frac{15}{16}$, bi-parietal $4\frac{1}{16}$. Duration of labour, eighteen hours. Treatment of the mother and child, successful.

In concluding this article, it may be proper to state, that in the collection of my obstetrical cases—now seven hundred and forty-two in number—I have recorded seven hundred and eighteen cephalic presentations, including those of eight twin labours. Of these, eight were of the face, six hundred and seventy-eight of the first position of the vertex, twelve of the second position, five of the fifth position; of the occipito-iliac positions I have had twenty-three, thirteen of the seventh, and ten of the eighth position. Ramsbotham says the seventh is the most frequent.

Of the pelvic presentations I have had twenty-five in the seven hundred and forty-two cases of labour. In one individual the presentation occurred three times under my supervision; in another, twice.

The shoulder presentation, usually considered as a deviation from the original head presentation, was found in seven cases.

A sacrum too straight, of an insufficient curvature, may give rise to a transverse condition of the head. I have never yet met with such a case; nor observed that species of delivery, described in the three cases reported by Madame Lachapelle, where the vertex makes its exit at the tuberosity of one ischium, the forehead afterwards emerging by extension aside of the internal surface of the opposite one.